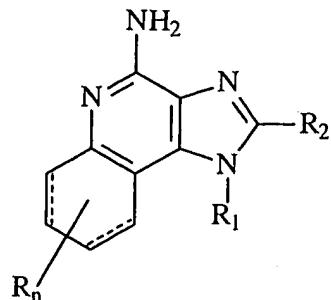


WHAT IS CLAIMED IS:

1. A compound of the formula (I):



5

(I)

wherein

- 10            R<sub>1</sub> is -alkyl-NR<sub>3</sub>- SO<sub>2</sub> -X-R<sub>4</sub> or -alkenyl-NR<sub>3</sub>- SO<sub>2</sub> -X-R<sub>4</sub> ;  
          X is a bond or -NR<sub>5</sub>-;  
          R<sub>4</sub> is aryl, heteroaryl, heterocyclyl, alkyl or alkenyl, each of which may be  
unsubstituted or substituted by one or more substituents selected from the group consisting  
of:
- 15            -alkyl;  
          -alkenyl;  
          -aryl;  
          -heteroaryl;  
          -heterocyclyl;
- 20            -substituted cycloalkyl;  
          -substituted aryl;  
          -substituted heteroaryl;  
          -substituted heterocyclyl;  
          -O-alkyl;
- 25            -O-(alkyl)<sub>0-1</sub>-aryl;  
          -O-(alkyl)<sub>0-1</sub>-substituted aryl;

-O-(alkyl)<sub>0-1</sub>-heteroaryl;  
-O-(alkyl)<sub>0-1</sub>-substituted heteroaryl;  
-O-(alkyl)<sub>0-1</sub>-heterocyclyl;  
-O-(alkyl)<sub>0-1</sub>-substituted heterocyclyl;

5 -COOH;  
-CO-O-alkyl;  
-CO-alkyl;  
-S(O)<sub>0-2</sub>-alkyl;  
-S(O)<sub>0-2</sub>-(alkyl)<sub>0-1</sub>-aryl;

10 -S(O)<sub>0-2</sub>-(alkyl)<sub>0-1</sub>-substituted aryl;  
-S(O)<sub>0-2</sub>-(alkyl)<sub>0-1</sub>-heteroaryl;  
-S(O)<sub>0-2</sub>-(alkyl)<sub>0-1</sub>-substituted heteroaryl;  
-S(O)<sub>0-2</sub>-(alkyl)<sub>0-1</sub>-heterocyclyl;  
-S(O)<sub>0-2</sub>-(alkyl)<sub>0-1</sub>-substituted heterocyclyl;

15 -(alkyl)<sub>0-1</sub>-NR<sub>3</sub>R<sub>3</sub>;  
-(alkyl)<sub>0-1</sub>-NR<sub>3</sub>-CO-O-alkyl;  
-(alkyl)<sub>0-1</sub>-NR<sub>3</sub>-CO-alkyl;  
-(alkyl)<sub>0-1</sub>-NR<sub>3</sub>-CO-aryl;  
-(alkyl)<sub>0-1</sub>-NR<sub>3</sub>-CO-substituted aryl;

20 -(alkyl)<sub>0-1</sub>-NR<sub>3</sub>-CO-heteroaryl;  
-(alkyl)<sub>0-1</sub>-NR<sub>3</sub>-CO-substituted heteroaryl;  
-N<sub>3</sub>;  
-halogen;  
-haloalkyl;

25 -(haloalkoxy);  
-CO-haloalkyl;  
-CO-haloalkoxy;  
-NO<sub>2</sub>;  
-CN;

30 -OH;  
-SH; and in the case of alkyl, alkenyl, or heterocyclyl, oxo;

$R_2$  is selected from the group consisting of:

- hydrogen;
- alkyl;
- alkenyl;
- aryl;
- substituted aryl;
- heteroaryl;
- substituted heteroaryl;
- alkyl-alkyl;
- 10 - alkyl-O- alkenyl; and
- alkyl or alkenyl substituted by one or more substituents selected from the group consisting of:

- OH;
  - halogen;
  - 15 - $N(R_3)_2$ ;
  - CO- $N(R_3)_2$ ;
  - CO-C<sub>1-10</sub> alkyl;
  - CO-O-C<sub>1-10</sub> alkyl;
  - $N_3$ ;
  - 20 -aryl;
  - substituted aryl;
  - heteroaryl;
  - substituted heteroaryl;
  - heterocyclyl;
  - 25 -substituted heterocyclyl;
  - CO-aryl;
  - CO-(substituted aryl);
  - CO-heteroaryl; and
  - CO-(substituted heteroaryl);
- 30 each  $R_3$  is independently selected from the group consisting of hydrogen and C<sub>1-10</sub> alkyl;

$R_5$  is selected from the group consisting of hydrogen and  $C_{1-10}$  alkyl, or  $R_4$  and  $R_5$  can combine to form a 3 to 7 membered heterocyclic or substituted heterocyclic ring;

$n$  is 0 to 4 and each  $R$  present is independently selected from the group consisting of  $C_{1-10}$  alkyl,  $C_{1-10}$  alkoxy, halogen and trifluoromethyl,

5 or a pharmaceutically acceptable salt thereof.

2. A compound of claim 1 wherein  $X$  is a bond.

3. A compound of claim 2 wherein  $n$  is 0.

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4. A compound of claim 2 wherein each  $R_3$  is hydrogen.

5. A compound of claim 2 wherein  $R_1$  is  $-(CH_2)_{2-4}-NR_3-SO_2-R_4$ .

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6. A compound of claim 2 wherein  $R_4$  is selected from the group consisting of alkyl, aryl and heteroaryl that may be unsubstituted or substituted by one or more substituents selected from the group consisting of:

-alkyl;

-alkenyl;

20

-aryl;

-heteroaryl;

-heterocyclyl;

-substituted aryl;

-substituted heteroaryl;

25

-substituted heterocyclyl;

-O-alkyl;

-O-(alkyl)<sub>0-1</sub>-aryl;

-O-(alkyl)<sub>0-1</sub>-substituted aryl;

-O-(alkyl)<sub>0-1</sub>-heteroaryl;

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-O-(alkyl)<sub>0-1</sub>-substituted heteroaryl;

-O-(alkyl)<sub>0-1</sub>-heterocyclyl;

-O-(alkyl)<sub>0-1</sub>-substituted heterocyclyl;

-COOH;  
-CO-O-alkyl;  
-CO-alkyl;  
-S(O)<sub>0-2</sub>-alkyl;  
5 -S(O)<sub>0-2</sub>-(alkyl)<sub>0-1</sub>-aryl;  
-S(O)<sub>0-2</sub>-(alkyl)<sub>0-1</sub>-substituted aryl;  
-S(O)<sub>0-2</sub>-(alkyl)<sub>0-1</sub>-heteroaryl;  
-S(O)<sub>0-2</sub>-(alkyl)<sub>0-1</sub>-substituted heteroaryl;  
-S(O)<sub>0-2</sub>-(alkyl)<sub>0-1</sub>-heterocyclyl;  
10 -S(O)<sub>0-2</sub>-(alkyl)<sub>0-1</sub>-substituted heterocyclyl;  
-(alkyl)<sub>0-1</sub>-NR<sub>3</sub>R<sub>3</sub>;  
-(alkyl)<sub>0-1</sub>-NR<sub>3</sub>-CO-O-alkyl;  
-(alkyl)<sub>0-1</sub>-NR<sub>3</sub>-CO-alkyl;  
-(alkyl)<sub>0-1</sub>-NR<sub>3</sub>-CO-aryl;  
15 -(alkyl)<sub>0-1</sub>-NR<sub>3</sub>-CO-substituted aryl;  
-(alkyl)<sub>0-1</sub>-NR<sub>3</sub>-CO-heteroaryl;  
-(alkyl)<sub>0-1</sub>-NR<sub>3</sub>-CO-substituted heteroaryl;  
-N<sub>3</sub>;  
-halogen;  
20 -haloalkyl;  
-haloalkoxy;  
-CO-haloalkoxy;  
-NO<sub>2</sub>;  
-CN;  
25 -OH;  
-SH; and in the case of alkyl, oxo.

7. A compound of claim 2 wherein R<sub>2</sub> is selected from the group consisting of hydrogen; alkyl; alkyl-O-alkyl; (alkyl)<sub>0-1</sub> aryl, (alkyl)<sub>0-1</sub>-(substituted aryl); (alkyl)<sub>0-1</sub>-heteroaryl; and (alkyl)<sub>0-1</sub>-(substituted heteroaryl).

8. A compound of claim 2 wherein R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1-4</sub>alkyl, and C<sub>1-4</sub>alkyl-O- C<sub>1-4</sub>alkyl.

9. A compound of claim 2 wherein the dashed bonds are absent.

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10. A compound of claim 1 wherein X is -NR<sub>5</sub>-.

11. A compound of claim 10 wherein n is 0.

10 12. A compound of claim 10 wherein R<sub>1</sub> is -(CH<sub>2</sub>)<sub>2-4</sub>- NR<sub>3</sub>- SO<sub>2</sub> -NR<sub>5</sub>-R<sub>4</sub>.

13. A compound of claim 10 wherein R<sub>2</sub> is selected from the group consisting of hydrogen; alkyl; alkyl-O-alkyl; (alkyl)<sub>0-1</sub> aryl, (alkyl)<sub>0-1</sub>-(substituted aryl); (alkyl)<sub>0-1</sub>-heteroaryl; and (alkyl)<sub>0-1</sub>-(substituted heteroaryl).

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14. A compound of claim 10 wherein R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1-4</sub>alkyl, and C<sub>1-4</sub>alkyl-O- C<sub>1-4</sub>alkyl.

20 15. A compound of claim 10 wherein R<sub>4</sub> and R<sub>5</sub> join to form a 3 to 7 membered heterocyclic or substituted heterocyclic ring.

16. A compound of claim 10 wherein R<sub>4</sub> and R<sub>5</sub> join to form a substituted or unsubstituted pyrrolidine, morpholine, thiomorpholine, piperidine, or piperazine ring.

25 17. A compound of claim 16 wherein R<sub>3</sub> is hydrogen.

18. A compound of claim 15 wherein R<sub>2</sub> is selected from the group consisting of hydrogen; alkyl; alkyl-O-alkyl; (alkyl)<sub>0-1</sub> aryl, (alkyl)<sub>0-1</sub>-(substituted aryl); (alkyl)<sub>0-1</sub>-heteroaryl; and (alkyl)<sub>0-1</sub>-(substituted heteroaryl).

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19. A compound of claim 16 wherein R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1-4</sub>alkyl, and C<sub>1-4</sub>alkyl-O- C<sub>1-4</sub>alkyl.

20. A compound of claim 10 wherein R<sub>4</sub> and R<sub>5</sub> are alkyl.

21. A compound of claim 20 wherein R<sub>3</sub> is hydrogen.

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22. A compound of claim 20 wherein R<sub>2</sub> is selected from the group consisting of hydrogen; alkyl; alkyl-O-alkyl; (alkyl)<sub>0-1</sub> aryl, (alkyl)<sub>0-1</sub>-(substituted aryl); (alkyl)<sub>0-1</sub>-heteroaryl; and (alkyl)<sub>0-1</sub>-(substituted heteroaryl).

10 23. A compound of claim 10 wherein R<sub>3</sub> is hydrogen.

24. A compound selected from the group consisting of:

N<sup>2</sup>-[2-(4-amino-2-butyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)ethyl]-2-thiophenesulfonamide;

15 N<sup>1</sup>-[2-(4-amino-2-butyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)ethyl]-1-benzenesulfonamide;

N<sup>8</sup>-[2-(4-amino-2-butyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)ethyl]-8-quinolinesulfonamide;

20 N<sup>1</sup>-[2-(4-amino-2-butyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)ethyl]-5-(dimethylamino)-1-naphthalenesulfonamide;

N-[4-(4-amino-2-butyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]methanesulfonamide;

25 N<sup>1</sup>-[4-(4-amino-2-butyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-1-benzenesulfonamide;

N<sup>8</sup>-[4-(4-amino-2-butyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-8-quinolinesulfonamide;

N<sup>2</sup>-[4-(4-amino-2-butyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-2-thiophenesulfonamide;

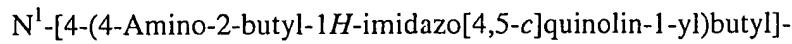
30 N<sup>2</sup>-[4-(4-amino-6,7,8,9-tetrahydro-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-2-thiophenesulfonamide;

N<sup>1</sup>-[4-(4-amino-6,7,8,9-tetrahydro-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-1-benzenesulfonamide;

- N<sup>8</sup>-[4-(4-amino-6,7,8,9-tetrahydro-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-8-quinolinesulfonamide;
- N<sup>1</sup>-[4-(4-amino-6,7,8,9-tetrahydro-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-5-(dimethylamino)-1-naphthalenesulfonamide;
- 5 N<sup>1</sup>-[4-(4-amino-2-butyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-4-fluoro-1-benzenesulfonamide;
- N<sup>1</sup>-[4-(4-amino-2-butyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-3-fluoro-1-benzenesulfonamide;
- 10 N-[2-[4-amino-2-(ethoxymethyl)-1*H*-imidazo[4,5-*c*]quinolin-1-yl]ethyl]methanesulfonamide;
- N<sup>2</sup>-{2-[4-amino-2-(ethoxymethyl)-1*H*-imidazo[4,5-*c*]quinolin-1-yl]ethyl}-2-thiophenesulfonamide;
- N<sup>1</sup>-{2-[4-amino-2-(ethoxymethyl)-1*H*-imidazo[4,5-*c*]quinolin-1-yl]ethyl}-5-(dimethylamino)-1-naphthalenesulfonamide;
- 15 N-[4-[4-amino-2-(2-methoxyethyl)-1*H*-imidazo[4,5-*c*]quinolin-1-yl]butyl]methanesulfonamide;
- N<sup>2</sup>-{4-[4-amino-2-(2-methoxyethyl)-1*H*-imidazo[4,5-*c*]quinolin-1-yl]butyl}-2-thiophenesulfonamide;
- N<sup>1</sup>-{4-[4-amino-2-(2-methoxyethyl)-1*H*-imidazo[4,5-*c*]quinolin-1-yl]butyl}-5-(dimethylamino)-1-naphthalenesulfonamide;
- 20 N<sup>1</sup>-{4-[4-amino-2-(2-methoxyethyl)-1*H*-imidazo[4,5-*c*]quinolin-1-yl]butyl}-4-fluoro-1-benzenesulfonamide;
- N<sup>1</sup>-{4-[4-amino-2-(2-methoxyethyl)-1*H*-imidazo[4,5-*c*]quinolin-1-yl]butyl}-3-fluoro-1-benzenesulfonamide;
- 25 N<sup>1</sup>-{4-[4-amino-2-(2-methoxyethyl)-1*H*-imidazo[4,5-*c*]quinolin-1-yl]butyl}-1-benzenesulfonamide;
- N<sup>8</sup>-{4-[4-amino-2-(2-methoxyethyl)-1*H*-imidazo[4,5-*c*]quinolin-1-yl]butyl}-8-quinolinesulfonamide;
- N<sup>2</sup>-{4-[4-amino-2-(4-methoxybenzyl)-1*H*-imidazo[4,5-*c*]quinolin-1-yl]butyl}-2-thiophenesulfonamide;
- 30 N-[4-(4-amino-2-butyl-6,7,8,9-tetrahydro-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]methanesulfonamide;

- N<sup>2</sup>-[4-(4-amino-2-butyl-6,7,8,9-tetrahydro-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-2-thiophenesulfonamide;
- 5 N<sup>1</sup>-[4-(4-amino-2-butyl-6,7,8,9-tetrahydro-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-5-(dimethylamino)-1-naphthalenesulfonamide;
- N<sup>1</sup>{-4-[4-amino-2-(2-methoxyethyl)-6,7,8,9-tetrahydro-1*H*-imidazo[4,5-*c*]quinolin-1-yl]butyl}-1-benzenesulfonamide;
- 10 N<sup>1</sup>{-4-[4-amino-2-(2-methoxyethyl)-6,7,8,9-tetrahydro-1*H*-imidazo[4,5-*c*]quinolin-1-yl]butyl}-5-(dimethylamino)-1-naphthalenesulfonamide;
- N'-{2-[4-amino-2-(ethoxymethyl)-1*H*-imidazo[4,5-*c*]quinolin-1-yl]ethyl}-*N,N*-dimethylsulfamide;
- 15 N'-{4-[4-amino-2-(2-methoxyethyl)-1*H*-imidazo[4,5-*c*]quinolin-1-yl]butyl}-*N,N*-dimethylsulfamide;
- N'-{4-[4-amino-2-(4-methoxybenzyl)-1*H*-imidazo[4,5-*c*]quinolin-1-yl]butyl}-*N,N*-dimethylsulfamide;
- 20 N'-[4-(4-amino-2-butyl-6,7,8,9-tetrahydro-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-*N,N*-dimethylsulfamide;
- N'-{4-[4-amino-2-(2-methoxyethyl)-6,7,8,9-tetrahydro-1*H*-imidazo[4,5-*c*]quinolin-1-yl]butyl}-*N,N*-dimethylsulfamide;
- N<sup>4</sup>-{4-[4-amino-2-(2-methoxyethyl)-1*H*-imidazo[4,5-*c*]quinolin-1-yl]butyl}-4-thiomorpholinesulfonamide;
- 25 N<sup>1</sup>-{4-[4-amino-2-(2-methoxyethyl)-1*H*-imidazo[4,5-*c*]quinolin-1-yl]butyl}-1-pyrrolidinesulfonamide;
- N<sup>1</sup>-[4-(4-amino-2-butyl-6,7,8,9-tetrahydro-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-4-fluoro-1-benzenesulfonamide;
- N-[4-(4-Amino-2-(2-methoxyethyl)-6,7,8,9-tetrahydro-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]methanesulfonamide; and
- N-{4-[4-amino-2-(2-methoxyethyl)-1*H*-imidazo[4,5-*c*]quinolin-1-yl]butyl}phenyl-methanesulfonamide.

30 25. A compound selected from the group consisting of:



- 5-(dimethylamino)-1-naphthalenesulfonamide;  
 $N^1$ -[4-(4-Amino-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-  
5-(dimethylamino)-1-naphthalenesulfonamide;  
 $N^2$ -[4-(4-Amino-2-butyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-  
2-thiophenesulfonamide;  
 $N$ -[4-(4-Amino-2-butyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-  
phenylmethanesulfonamide;  
 $N^1$ -[4-(4-Amino-2-butyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-  
1-benzenesulfonamide;
- 10       $N$ -[4-(4-Amino-2-butyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]  
Methanesulfonamide;  
 $N^1$ -[4-(4-Amino-2-butyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-  
3-nitro-1-benzenesulfonamide;  
 $N^1$ -[4-(4-Amino-2-butyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-  
3-amino-1-benzenesulfonamide;
- 15       $N^1$ -[4-(4-Amino-2-butyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-  
4-nitro-1-benzenesulfonamide;  
 $N^1$ -[4-(4-Amino-2-butyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-  
4-amino-1-benzenesulfonamide;
- 20       $N^5$ -[4-(4-Amino-2-butyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-  
5-isoquinolinesulfonamide  
 $N$ -[4-(4-Amino-2-(4-methoxybenzyl)-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-  
methanesulfonamide;  
 $N^1$ -[4-(4-Amino-1*H*-imidazo[4,5-*c*]quinolin-1-*y*)butyl]-1-butanesulfonamide;
- 25       $N^1$ -{4-[4-Amino-2-(2-methoxyethyl)-6,7,8,9-tetrahydro-  
*1H*-imidazo[4,5-*c*]quinolin-1-yl]butyl}-4-fluoro-1-benzenesulfonamide;  
 $N^1$ -[4-(4-Amino-2-phenyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]-  
4-fluoro-1-benzenesulfonamide; and  
 $N$ -[4-(4-Amino-2-phenyl-1*H*-imidazo[4,5-*c*]quinolin-1-yl)butyl]  
methanesulfonamide.

26. A pharmaceutical composition comprising a therapeutically effective amount of a compound of claim 1 and a pharmaceutically acceptable carrier.
27. A pharmaceutical composition comprising a therapeutically effective amount of a compound of claim 2 and a pharmaceutically acceptable carrier.
28. A pharmaceutical composition comprising a therapeutically effective amount of a compound of claim 10 and a pharmaceutically acceptable carrier.
- 10 29. A method of inducing cytokine biosynthesis in an animal comprising administering an effective amount of a compound of claim 1 to the animal.
30. A method of treating a viral disease in an animal comprising administering an effective amount of a compound of claim 1 to the animal.
- 15 31. A method of treating a neoplastic disease in an animal comprising administering an effective amount of a compound of claim 1 to the animal.
32. A method of inducing cytokine biosynthesis in an animal comprising administering an effective amount of a compound of claim 2 to the animal.
- 20 33. A method of treating a viral disease in an animal comprising administering an effective amount of a compound of claim 2 to the animal.
- 25 34. A method of treating a neoplastic disease in an animal comprising administering an effective amount of a compound of claim 2 to the animal.
35. A method of inducing cytokine biosynthesis in an animal comprising administering an effective amount of a compound of claim 10 to the animal.

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36. A method of treating a viral disease in an animal comprising administering an effective amount of a compound of claim 10 to the animal.

37. A method of treating a neoplastic disease in an animal comprising administering an effective amount of a compound of claim 10 to the animal.  
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